

Terms of Reference

CICE Consortium

The CICE Consortium has been formed in order to coordinate sea-ice modeling across a number of related world-wide efforts, each supported by a Consortium Sponsor who has agreed to the following terms of reference.

Objectives

CICE's community of stakeholders and primary developers has formed a new sea ice modeling consortium as a vehicle for collaboration and sharing, to maintain the current CICE model for existing and new users, to incorporate and maintain new research and development, and to accelerate scientific sea ice model development and its transfer into operational use.

Scope

The CICE Consortium is intended to incorporate and maintain new research and development but not perform the R&D itself. Likewise the Consortium is intended to support the CICE sea ice model and its descendants, but not the coupled models or configurations that use them. Therefore these terms of reference refer to the purpose and structures of the Consortium effort and not to sea ice or coupled modeling work done in the wider community, including that supported by the Sponsors.

Deliverables

The CICE Consortium's ultimate goal is to enhance sea ice model development for and by the community. The Consortium will help coordinate code improvements and provide the means for confidence testing on which agencies can base their decisions for code acceptance in their models. The CICE sea ice model and a new, stand-alone software package containing the column physics, called Icepack, will be released in open repositories with a testing and analysis suite for each. A work plan including a schedule for the first two years (2017-2018) is available from the Lead Coordinator upon request.

Implementation Methodology

- Create a formal governance structure to ensure that sponsor requirements are met and to oversee the plans and progress of the Consortium. The CICE Consortium Governance document defines the roles of the Sponsor, an Executive Oversight Board and the project's upper management.

- Establish an organizational structure to realize the efficiencies offered by a coordinated effort by providing guidelines for the day-to-day operation of the project and defining roles for all individuals contributing their time and expertise. Include a process and timeline for nominations/appointments of team leadership and membership as well as a succession plan for leadership roles. The CICE Consortium's organizational structure is described in the Expertise section below.
- Draft a "Policies and Guidelines" document that includes the following: Intellectual Property Protection; a Dispute Settlement Mechanism; Code Contribution Responsibilities; a process for Institutional Acceptance of New Code Contributions; and Code Management.

Expertise

The Executive Oversight Board and Executive Committee, which includes the Lead Coordinator, Co-lead Coordinator and Lead Software Engineer, are charged with ensuring that Sponsor requirements are met. These roles are described in the Governance document. Consortium work is divided into Task Teams. A generic description of how Team members will coordinate to accomplish code modifications is included in the Workflow document.

Team roles and responsibilities

Task Team members are responsible for the planning and implementation of tasks needed to maintain and distribute the model software and documentation for Consortium Members and the community in a manner that promotes the ease of future model development. Team members may be from multiple institutions and are appointed by and report to the Team Leads. They make suggestions for best practices and work with developers to carry them out. Team members' work includes

- Writing scripts for testing and analysis tools
- Incorporating new developments (scientific or technical)
- Performing basic software testing and oversight per best practices
- Providing assistance to new users
- Providing practical support for user meetings

Task Team members are not responsible for support of scientific research and development, parameter tuning or emergency responses following operational failures.

Team Leads are responsible for coordination of the work required of each Task Team and for cross-team coordination. They are appointed by the Executive Oversight Board and report to the Lead Coordinator. They ensure timely completion of each Team's work and serve as primary points of contact for communications with the Lead Coordinator and other Team Leads. A committee consisting of the Team Leads, Lead Coordinator, Co-lead Coordinator and Software Engineer acts as a science oversight/advisory board and also functions as a change control board for the code.

Coordination roles within the Consortium include

- Having the authority to make decisions isolated to their teams
- Assigning Team personnel, coordinating with other Team Leads as needed (e.g. when they do not control funding for the task)
- Coordinating with each other to prevent conflicts
- Setting up limited-term working groups and appointing their leaders to further explore particular strategies and/or technical choices, as needed

Planning roles:

- Ensuring that the most useful developments in the research and operational communities are integrated into the software base
- Coordinating developments planned by scientists outside the Consortium with the Consortium [frequency] Plan
- Reviewing trends and emerging science and technologies to identify and prioritize opportunities for advancing the capabilities of the model for use by the research and operational communities

Process and timeline for nominations/appointments of leadership and team members

Nominations for leadership positions are provided bottom-up. Initial leadership roles will be for a period of 2 years. Thereafter, sponsors appoint members of the Executive Oversight Board, which in turn appoints the Lead Coordinator(s) and Team Leads. Team Leads appoint their Team Members, in consultation with other Team Leads as needed. The Software Engineer is an employee or contractor of one of the Consortium Members recommended and/or approved by the committee of Team Leads.

Succession/backup plan for leadership roles

The CICEdyn, Icepack and Community Support Teams have Co-Leads. Nearly all of the Consortium Members are interested in the other Team's activities, may already be doing these tasks for CICE at their institutions, and will assist the listed lead institution and/or participate directly in those activities. In addition, a Co-Lead Coordinator will be identified to support the Lead Coordinator and possibly serve as the successor in the Lead Coordinator position.

Review and Amendment

This document will be reviewed two years from its effective date, and renewed or replaced to ensure that the objectives, scope, deliverables and implementation meet the needs of the Sponsors, and that the organizational structure and roles of the Consortium remain relevant and support its goals and purposes. Amendments to this document may be made with the approval of the Executive Oversight Board and the Sponsors.

Document history

21 Jan 2017: Initial draft (based on October 2016 Workshop Report)

9 March 2017: Approved by Team Leads

23 March 2017: Added links to distribution policy, software guidelines

8 May 2017: Parsed from the original draft Governance and Terms of Reference document with additional input from the EOB

1 July 2017: Removed links and dated for public posting